EXECUTIVE SUMMARY

In 1990, the U.S. Environmental Protection Agency (USEPA), the U.S. Army Corps of Engineers (USACE), the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB), the San Francisco Bay Conservation and Development Commission (BCDC), and the State Water Resources Control Board (SWRCB) joined together with navigation interests, fishing groups, environmental organizations, and other public entities to establish the Long Term Management Strategy Program (LTMS) for the dredged material from the San Francisco Bay Area (Figure ES.1). The goals of the LTMS are to conduct the dredging and disposal of dredged material in an environmentally and economically sound manner, to maximize the beneficial reuse of dredged material, and to develop a coordinated permit review process for dredged material disposal projects.

Original LTMS goals
(adopted by the LTMS Executive Committee June 7, 1991)

- Maintain in an economically and environmentally sound manner those channels necessary for navigation in San Francisco Bay and Estuary and eliminate unnecessary dredging activities in the Bay and Estuary;
- Conduct dredged material disposal in the most environmentally sound manner;
- Maximize the use of dredged material as a resource; and
- Establish a cooperative permitting framework for dredging and disposal applications.

The final *Long-Term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Region Policy Environmental Impact Statement/Programmatic Environmental Impact Report* (LTMS EIS/EIR) was jointly published by the LTMS agencies in October 1998. The LTMS for the San Francisco Bay Area identified as the preferred alternative in the LTMS EIS/EIR and the selected alternative in the federal Record of Decision (ROD) includes low disposal volumes at in-Bay sites, medium disposal volume in the ocean, and medium volumes of upland reuse placement (Figure ES.2). The LTMS EIS/EIR recognized that these target volumes would be difficult to achieve under existing agency authorities and conditions and included a preliminary discussion of steps that could be taken to more fully attain the long-term goals of the selected alternative. The ROD for the EIS, signed by the USACE and USEPA in October 1999, described some mechanisms necessary to implement this alternative, including proposed amendments to the *San Francisco Bay Plan* (Bay Plan) and the *San Francisco Basin Plan* (Basin Plan). [1]

1 The ROD completed the federal requirements for finalizing the EIS process. It should also be noted that, in October 1999, the SWRCB certified the EIR pursuant to the requirements of the California Environmental Quality Act (CEQA).

FIGURE ES.1. LTMS Planning Area

Figure ES.2. LTMS for Bay Area

The LTMS Management Plan (Management Plan), which replaces the existing LTMS Interim Management Plan (LTMS 1994b) as the regional decision-making framework for disposal of dredged material, presents specific mechanisms for implementing the selected long-term management strategy for dredging and disposal activities in the Bay Area over the next 50 years.[2]

1.0 BACKGROUND

Historically, dredged material from navigation channels in San Francisco Bay has been disposed throughout the Bay, but is now limited to the four state and federally designated sites: Carquinez Strait (SF-9), San Pablo Bay (SF-10), Suisun Bay (SF-16), and Alcatraz (SF-11). Although sediments disposed of at the most heavily used site, Alcatraz, were originally expected to disperse, a large mound of dredged material was discovered in 1982, and, despite attempts to improve site management, mounding has persisted.

The mounding posed potential navigation problems and the capacity of the Alcatraz site was insufficient to accommodate substantial volumes of material expected to be generated by new work projects. Representatives from the fishing, scientific, and environmental communities expressed concern regarding the impacts of dredged material disposal on fisheries and other ecological resources of San Francisco Bay. The regulatory agencies began to consider changes to their requirements on a case-by-case and agency-by-agency basis, reducing predictability for dredging project sponsors, and public confidence that environmental resources were being adequately protected. These disposal site limitations, environmental concerns, and project delays resulted in what was commonly known as "mudlock."

The capacity limitation and controversy over the environmental impacts of in-Bay disposal highlighted the need for a diverse array of alternative disposal options, so that the region would not be dependent on a single site to support the region's maritime needs. In response, the primary regulatory agencies (USACE, USEPA, SFBRWQCB, BCDC, and SWRCB), and representatives from the regulatory, scientific, navigation, fishing, and environmental communities initiated the LTMS in 1990. The long-term dredging and disposal need for the Bay Area is estimated to be approximately 300 million cubic yards (mcy) over a 50-year period, an average of about 6.0 mcy per year. The LTMS is being conducted in five separate phases. The Management Plan has been prepared as part of Phase IV. Periodic reviews and revisions of the Management Plan will occur in Phase V.

2 For more information, refer to LTMS 1994 Progress Report and Interim Management Plan, prepared by LTMS Agencies. 100 pp. with appendices.

2.0 PUBLIC REVIEW AND COMMENT

Preparation of the Management Plan began in April 1998, when the agencies held a set of initial public workshops to present and discuss issues related to implementation of the LTMS. Beginning in April 1999, the remainder of the public workshops focused on key issues as identified by the stakeholders. The public workshop process provided early input from the stakeholders regarding implementation issues and opportunities to comment, which the LTMS agencies used in the development of the Management Plan. Written comments received during this period are provided in Appendix A.

The Management Plan is scheduled for public review and comment starting in June 2000. The Management Plan also will contain proposed amendments to the Bay Plan and Basin Plan, necessary to carry out measures specified in the Management Plan. A BCDC and SFBRWQCB joint public hearing on the Draft Management Plan, as well as the proposed Bay Plan and Basin Plan amendments, is scheduled for July 2000. The LTMS federal partners, USACE and USEPA, also will be present for the public hearing. After the close of the public hearing, the Draft Management Plan and proposed amendments to the Bay Plan and Basin Plan will be revised in response to public comments and finalized. The Final Management Plan and Bay Plan and Basin Plan amendments are currently scheduled for release in early fall 2000, with a BCDC and SFBRWQCB vote scheduled shortly thereafter.

After the Management Plan is finalized, the LTMS agencies will take specific actions to reflect recommended changes in their statutory, regulatory, or management requirements; for example, the final Bay Plan and Basin Plan amendments will be formalized. Additionally, in the fall of 2000, the USACE is scheduled to initiate revisions to the Dredged Material Management Plans (DMMPs) and possibly the composite Environmental Impact Statement (EIS) for the operations and maintenance program of the federal navigation channels in San Francisco Bay.

3.0 CEQA/NEPA

The SFBRWQCB and the BCDC are both "certified agencies," and thus exempt from the California Environmental Quality Act (CEQA) requirements to prepare EIRs and Negative Declarations. The agencies, however, must comply with CEQA's goals and policies, requirements for public review, response to comments, and adoption of CEQA findings. Further, the agencies must prepare "substitute documents," which include an evaluation of the impacts, alternatives, mitigation measures, and cumulative effects of proposed actions. The SFBRWQCB and BCDC staff report(s) attached to the Management Plan qualify as a "substitute document."[3] The Bay Plan and Basin Plan amendment process will include public comment periods and public hearings, and response to comments by the agencies. The federal LTMS partners are not required

3 As will the staff recommendation regarding the Bay and Basin Plan amendments, which will be presented to the BCDC Commissioners and SFBRWQCB members along with the Final LTMS Management Plan.

by the National Environmental Policy Act (NEPA) to take any specific or formal action with regard to the Management Plan. However, the Management Plan will be signed by all the LTMS agencies.

4.0 REVIEW AND REVISION

The Management Plan will be reviewed and updated as necessary. During the initial three-year period following finalization of the Management Plan, the LTMS agencies will produce an annual progress report for the program. Subsequently, the Management Plan will be reviewed and, if necessary, revised every three years to reflect changing statutory, regulatory, technical, and environmental conditions.

5.0 DOCUMENT OVERVIEW

Following finalization and publication of the Management Plan, specific measures will be implemented either immediately or over time. These measures are presented in the Management Plan and are directly related to information contained in the different chapters, as discussed below.

5.1 LTMS STRUCTURE (CHAPTER 2)

Revised LTMS goals
(to be adopted by the LTMS Executive Committee [2000])

- Maintain in an economically and environmentally sound manner those channels necessary for navigation in San Francisco Bay and Estuary and eliminate unnecessary dredging activities in the Bay and Estuary;
- Conduct dredged material disposal in the most environmentally sound manner;
- Maximize the use of dredged material as a resource; and
- Maintain the cooperative permitting framework for dredging and disposal applications.

In 1991, when the LTMS was initiated, the goals of the program included the sound maintenance of San Francisco Bay's navigation channels, the elimination of unnecessary dredging, environmentally sound disposal of dredged material, maximum use of this material as a resource, and the establishment of a cooperative framework for dredging and disposal permit applications. Since that time, considerable progress toward reaching these goals has occurred. The volume of dredged material disposed of at the in-Bay sites is considerably lower now than historical volumes. The Dredged Material Management Office (DMMO), a coordinated permit application review program of the USACE, BCDC, SFBRWQCB, USEPA and the SLC, was established in 1995. Additionally, several beneficial reuse projects have been implemented since 1991, including the Sonoma Baylands wetlands restoration project (Sonoma County), the Galbraith Golf Course reconstruction project (Alameda County), and the Winter Island levee rehabilitation project (Contra Costa County). The original goals have, therefore, been revised to reflect current conditions, and to ensure that issues raised in this Management Plan and ongoing efforts of the LTMS will be consistent with these goals.

During the implementation phase of the LTMS, the overall structure will be changed to reflect needs more specific to implementation and review of the program. The five primary agencies

Figure ES.3. LTMS Organizational Structure

(USACE, USEPA, BCDC, SFBRWQCB and SWRCB) will continue to work under the aegis of the LTMS to achieve the program's goals. The original LTMS structure, however, will be changed as discussed below and illustrated in Figure ES.3.

5.1.1 Executive and Management Committees

The LTMS Executive Committee (Executive Committee), representing the five LTMS agencies, will meet as necessary to review policy guidelines and give direction on the overall program. The LTMS Management Committee (Management Committee), which is responsible to the Executive Committee, will manage and coordinate the LTMS effort, including the Management Plan reviews and revisions. The directors/managers of all the LTMS agencies, except the SWRCB, will participate at the Management Committee level. The California Coastal Conservancy, California Department of Fish and Game (CDFG) and U.S. Fish and Wildlife Service (USFWS) will join the Management Committee for issues regarding beneficial reuse sites.

When necessary, the LTMS Management Committee—joined by the director/manager of the SLC—will deal with DMMO issues that cannot be resolved at the staff level. During the implementation phase of the LTMS, the DMMO, which is currently a pilot program, will be formalized, following regulation changes by the BCDC and SLC.

5.1.2 Program Management Team

The LTMS Program Management Team, made up of the senior technical managers of the USACE, USEPA, SFBRWQCB, and BCDC, will be established and work closely with the DMMO, the LTMS stakeholders, and other related planning efforts with overlapping interests to and goals of the LTMS (e.g., San Francisco Estuary Project, CALFED, National Dredging Policy, and others). The Program Management Team will hold quarterly public workshops to present and review new or changing statutory, regulatory, and technical information related to the LTMS and head the effort to review and revise the Management Plan. Individual work groups will be formed to focus on specific issues, whose progress will be reported at these workshops. Additionally, once a year, the Executive and Management Committees will attend these public workshops.

5.1.3 Data Management Team

The LTMS agencies do not have a data management system that can adequately provide an inventory of the data for the agencies and interested public to access. A Data Management Team will, therefore, be formed to develop a system for managing the materials related to the LTMS (e.g., hydrosurveys, testing results, disposal volume records).

5.1.4 LTMS Implementation Measures

The following measures are proposed to achieve the goals of the LTMS:

5.1.4.1 LTMS Goals

- The LTMS Executive Committee will consider adoption of revised goals for the overall program to reflect changing conditions and to ensure implementation of the new dredging management strategy.

5.1.4.2 LTMS Structure

- Upon adoption of the LTMS Management Plan, the primary LTMS agencies, the USACE, USEPA, BCDC, SFBRWQCB and the SWRCB will operate under a new LTMS structure that includes the following components: the Executive Committee, the Management Committee, the Program Management Team, the Dredged Material Management Office (DMMO) and the Data Management Team. This new structure will include at the LTMS Management Committee level the California Coastal Conservancy, the California Department of Fish and Game, and the U.S. Fish and Wildlife Service, as necessary, in order to facilitate implementation of beneficial reuse options and the State Lands Commission, as necessary, in order to settle dredging and disposal issues that cannot be resolved at the DMMO staff level.

5.1.4.3 Formalization of the Dredged Material Management Office (DMMO)

- BCDC and the State Lands Commission will initiate the regulation changes necessary to formalize the Dredged Material Management Office (DMMO). Upon completion of these regulation changes, the DMMO General Operating Procedures will be revised, and a new Memorandum of Understanding will be adopted and signed by the DMMO member agencies.

5.1.4.4 Creation of Data Management System

- The LTMS agencies will create a Data Management Team that will develop and maintain a data management system. The system will be made readily available to all parties, probably via the Internet.

5.2 AUTHORIZATION OF DREDGING AND DISPOSAL PROJECTS (CHAPTER 3)

The DMMO, which is made up of representatives from the USACE, BCDC, SFBRWQCB, USEPA and SLC provides a single point-of-entry into and contact to the dredging and disposal permitting process. The DMMO provides a single application form and makes consensus-based recommendations to its member agencies on completeness of permits, adequacy of sediment

sampling and analysis plans, and suitability of sediments for proposed disposal environments.[4] It is important to note that the DMMO agencies that authorize dredging and dredged material disposal activities through the issuance of permits will still continue to require those permits and process them through their standard procedures. (For more information regarding contacting the DMMO and types of permits required for dredging and disposal activities, see Chapter 3.)

5.2.1 CEQA/NEPA

Dredging and disposal projects requiring permits are subject to provisions of CEQA and NEPA to ensure disclosure of potential environmental impacts and to determine whether a proposed project is likely to have a significant environmental impact. As a result, the appropriate level of environmental review is provided. For dredging and disposal projects in the Bay Area, the USACE typically serves as the NEPA lead agency, while a local government or port commonly serves as the CEQA lead agency. In spite of the NEPA and CEQA requirements for public notification and review, in some projects—for example, where the LTMS agencies are not the lead agency or where portions of a project occur outside of the jurisdiction of the DMMO agencies—the public has become aware of proposals after environmental review has been completed. To ensure adequate environmental review of local projects, early coordination with the lead agencies, the LTMS agencies, and other interested parties will be necessary.

5.2.2 Biological Windows

The LTMS agencies consulted with state and federal resource agencies (CDFG, USFWS and National Marine Fisheries Service [NMFS]) to develop program-level mitigation measures for the LTMS program. The result of this consultation was a series of restrictions on dredging projects ("biological windows"), designed to protect special status species and important commercial and recreational fisheries and their critical habitat. Dredging projects that follow these biological windows are not subject to further consultation with these resource agencies. The resource agencies must review projects deviating from the restrictions (Chapter 3, Tables 3.3 and 3.4).

5.2.3 Analyzing Disposal Alternatives

Section 404(b)(1) of the Clean Water Act (CWA) requires that the 404(b)(1) guidelines alternatives analysis be satisfied for disposal of dredged material into waters of the United States. In addition, CWA Section 404 requires that any discharge of dredged or fill material be the least environmentally damaging practicable alternative. BCDC's laws and policies regarding Bay fill require that an analysis be performed for aquatic disposal of dredged material to determine if alternative disposal sites are practical or feasible to use. The regulatory agencies will continue to evaluate practicability on a case-by-case basis, using existing regulations and general policies to

4 The DMMO Consolidated Permit Application form is available by contacting the LTMS agencies or on the DMMO website: www.spn.usace.army.mil/conops/dmmo.htm

assist with the evaluation regarding logistical, technological, economic, and environmental practicability of alternatives.

One key feature to determine the practicability of the proposed disposal site is the quality of the proposed dredged material for a particular disposal or reuse environment. Sediment testing can be costly, and tests required for different disposal or reuse environments may be different. To minimize the possibility of unnecessarily testing sediments for more than one disposal or reuse environment, the DMMO will encourage proponents for projects to submit an alternatives analysis before conducting testing. A list of questions to guide applicants in preparing the analysis is found in Chapter 3.

5.2.4 Standardized Permit Conditions

To reduce regulatory overlap and redundancy, inconsistency among permit conditions, and improve environmental protection, the LTMS agencies have developed standardized permit conditions that, if found applicable and appropriate for individual dredging and disposal projects, will be used (Appendix G).

5.2.5 LTMS Implementation Measures

The following measures are proposed to achieve the goals of the LTMS as they relate to authorization of dredging and dredged material disposal activities:

5.2.5.1 Consistency in Environmental Review of Projects

- The LTMS agencies will prepare a guidance document on potential environmental impacts of dredging, dredged material disposal, and beneficial reuse projects on the relevant regulatory processes for such projects. The document will be used by LTMS agencies during CEQA and NEPA review, and will be distributed to other agencies that may serve as the lead agencies for such projects.

5.2.5.2 Involvement of Agencies and Interested Parties during Planning Phases of Projects

- The LTMS agencies will encourage project proponents to involve the agencies and interested parties early in the planning phases of projects by encouraging project proponents to form work groups, where appropriate, and by encouraging early coordination with the Dredged Material Management Office.

5.2.5.3 Restrictions on Dredging and Disposal Projects Consistent with CDFG, USFWS and NMFS Biological Opinions on the LTMS EIS/EIR

- Dredging and dredged material disposal activities will be restricted as indicated in Figures 3.2 and 3.3 (and in Appendix F). Any projects proposing deviations from these restrictions will be approved by the permitting agencies only after completion of required consultation under

Section 7 of the Endangered Species Act by the appropriate federal action agency. The permitting agencies will closely review disposal projects proposed for the designated in-Bay disposal sites to ensure that disposal during the specified time frames is avoided or minimized. The permitting agencies will require that the need for disposal at the in-Bay sites during the specified time frames is clearly established.

5.2.5.4 Determining Disposal Location before Performing Sediment Testing

- To minimize the possibility of more than one sampling and testing event to test sediments for more than one disposal environment, the Dredged Material Management Office will encourage project proponents to submit an alternatives analysis pursuant to the Clean Water Act and a statement of consistency with BCDC's policies regarding fill in the Bay before proposing and implementing any sediment testing.

5.2.5.6 Standard Permit Conditions

- The LTMS agencies, in issuing permits for dredging and disposal projects, will coordinate permit conditions and may use permit conditions language in Appendix G, where appropriate. Each agency may include other permit conditions, in addition to those listed.

5.3 DREDGED MATERIAL SUITABILITY DETERMINATIONS (CHAPTER 4)

As part of the authorization process, the DMMO agencies must determine whether material proposed for dredging is suitable for the proposed disposal or reuse environment. Therefore, project proponents must test—unless an exclusion is granted—material for either Bay, ocean, or reuse sites. For ocean disposal, project proponents obtain guidance from the "Green Book"[5] and for in-Bay disposal from the "Inland Testing Manual."[6] Both testing approaches are tiered and effects-based, and both are used to ensure adequate information is generated so projects may comply with the requirements of the Section 404(b)(1) Guidelines of the CWA.

To help identify "cover" and "non-cover" quality dredged material, project proponents currently use *Sediment Screening Criteria and Testing Requirements for Wetlands Creation and Upland Beneficial Reuse*, which was developed by the SFBRWQCB to provide examples of chemical concentrations and analyses that might be considered in establishing suitability guidance values to test material for beneficial reuse.[7] Reuse options for cover-quality material typically include

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5 USEPA and USACE 1991, *Evaluation of Dredged Material Proposed for Ocean Disposal: Testing Manual.*

6 USACE and USEPA 1998, *National Guidance for Evaluation of Material to Be Disposed in Waters of the U.S.*

7 For more information refer to SFBRWQCB 1992, *Sediment Screening Criteria and Testing Requirements for Wetlands Creation and Upland Beneficial Reuse*.

wetland restoration, levee maintenance, and landfill cover. Although not considered hazardous or a listed waste, non-cover quality material has been found to be unsuitable for unconfined open water disposal, but could be used beneficially in projects that do not involve direct contact with surface water or aquatic organisms (e.g., for wetland restoration if covered with cover-quality sediment, landfills, and levees).[8] The final determination of sediment suitability must, however, still consider site location, design, and proposed construction methodology(s).

The SFBRWQCB is currently revising *Sediment Screening Criteria and Testing Requirements for Wetlands Creation and Upland Beneficial Reuse*. In addition, the LTMS agencies will review bioassays appropriate for reuse environments to address the bioavailability of contaminants, particularly metals, when dredged material is placed outside the aquatic environment, and they may also establish standardized beneficial reuse resting requirements.

5.3.1 Sediment Quality Criteria

Sediment quality criteria (SQC) have been developed that generally represent a single sediment chemical concentration, below which it is believed disposal poses minimal risk to the aquatic environment. However, in light of the approaches used in developing the SQC, the LTMS agencies do not use them to make decisions about sediments proposed for disposal. Instead, a work group has been established to develop sediment quality guidelines (SQG) or "trigger levels," which will be used to require additional testing, if necessary. To date, the SQG work group has focused on the development of bioaccumulation trigger levels for material proposed for disposal in San Francisco Bay. The SQG work group also has chosen a preliminary list of "contaminants of concern" (COCs) to identify compounds with known use in the Bay Area and long residence times, that are prone to bioaccumulation. This list will be revised, as necessary. In addition, the SQG work group will develop guidelines for beneficial reuse projects, as well as appropriate testing protocols.[9] All draft guidance will be published for public review and comment before finalization. The SQG work group focusing on SQGs for in-Bay disposal will meet through October 2000. Subsequently, the effort focused on beneficial reuse is expected to meet through 2002.

5.3.2 Reference Sites

The reference site serves as the point of comparison to identify potential effects of contaminants in material proposed for disposal and is generally selected based on similarities to the grain size, composition, geology, and habitat of a designated aquatic disposal site. Ongoing disposal, however, can alter and degrade a reference site over time. Further, the physical characteristics of

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8 Additionally, non-cover quality material must be tested using the California Waste Extraction Test (as described in CCR Title 22) to determine that water leaching through the material will not adversely impact surface water quality or aquatic organisms.

9 It should be noted that the SFBRWQCB is currently reviewing the existing screening criteria for beneficial reuse projects.

most dredged material do not match the material at the main disposal site near Alcatraz Island. Consequently, confounding factors can be incorporated in the testing process and skew results. In 1995, USEPA issued a draft rule to address this matter[10], which is scheduled to be finalized by the end of 2000. Upon finalization, the LTMS agencies will recommend that project testing be carried out using new reference sites from areas similar to those proposed for dredging. (Chapter 4, Table 4-1 identifies the locations of potential sites.)

5.3.3 Regional Implementation Manual

The LTMS agencies plan to develop the Regional Implementation Manual (RIM), which will serve as a single testing manual for disposal and reuse environments and contain local/regional test protocols, COCs, appropriate species for bioassays, and quality assurance information. The RIM will be subject to public review and comment.

5.3.4 LTMS Implementation Measures

The following measures are proposed to achieve the goals of the LTMS as they relate to dredged sediment suitability and determinations:

5.3.4.1 Revise Sediment Screening Criteria and Testing Requirements for Wetlands Creation and Upland Beneficial Reuse

- The San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) will revise its guidance document, *Sediment Screening Criteria and Testing Requirements for Wetland Creation and Upland Beneficial Reuse*, which will provide guidance on testing (including recommendations for reference sites) for various beneficial uses and sediment quality screening guidelines for beneficial reuse and upland disposal. The SFBRWQCB will issue a draft version of the revised document for public comment and hold at least one public workshop during the public comment period. Following the close of public comments, SFBRWQCB staff will revise the document and issue a final version. The document will be revised or updated as needed.

5.3.4.2 Development of Bioassays for Upland Sites

- A long-term goal of the LTMS agencies involves the development of bioassays for beneficial reuse and upland environments, which will likely be subject to verification and scientific peer review, and laboratory and field testing prior to their use as a regulatory tool.

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10 The rule adds a specific definition of reference sediment that is consistent with the use of the term in the ocean disposal program.

5.3.4.3 Development of Sediment Quality Guidelines

- The LTMS agencies will continue to sponsor the efforts of the SQG work group through year 2002 and publish for public review the work group's results, including the scientific technical bases for the SQGs. The LTMS agencies also will hold at least one public meeting describing the guidelines, their formation, and their proposed use. The work group's results may be modified in accordance with comments received.

5.3.4.4 New Reference Sites

- Upon finalization of the U.S. Environmental Protection Agency's proposed rule on reference sites, the LTMS agencies will recommend that testing for dredging projects be carried out using new reference sites from the San Francisco Bay Regional Water Quality Control Board report, *Evaluation and Use of Sediment Reference Sites and Toxicity Tests in San Francisco Bay.*

5.3.4.5 Preparation of a Regional Implementation Manual

- The LTMS agencies will produce a Regional Implementation Manual (RIM), which will incorporate existing local guidance for testing requirements for all disposal environments. A draft version of the RIM will be issued via the U.S. Army Corps of Engineers' Public Notice process. During the public comment period, the Dredged Material Management Office will host at least one public workshop. At this workshop, the RIM will be presented, comments taken, and questions answered. After the public comment period, the LTMS agencies will revise the RIM in response to comments and issue a final version. The document will be revised or updated as needed with substantive changes undergoing public review.

5.4 DISPOSAL AND REUSE SITE MANAGEMENT AND MONITORING (CHAPTER 5)

Management and monitoring efforts help to understand and address the impacts of dredging and disposal. Currently, there is an established Site Management and Monitoring Plan for the federally designated San Francisco Deep Ocean Disposal Site (SF-DODS). Efforts are currently underway to develop a similar plan for the in-Bay disposal sites. For beneficial reuse sites, management and monitoring plans are typically prepared on a case-by-case basis.

5.4.1 In-Bay Sites

Monitoring efforts for the in-Bay disposal sites have been largely limited to the collection of physical data (including bathymetric mapping and disposal volume tracking) by USACE. Further, the USACE and other dredgers have supported regional monitoring through contributions to the San Francisco Bay Regional Monitoring Program (RMP) for Trace Substances. To date, monitoring of the in-Bay sites has been less aggressive than that for the SF-DODS, in large part because these sites were originally believed to be dispersive and their use limited to material

deemed "suitable for unconfined aquatic disposal" (SUAD). It is now known, however, that not all material taken to the in-Bay sites has dispersed, and recent measurements of the Alcatraz "Environs" reference site have shown elevated levels of at least one group of contaminants (polyaromatic hydrocarbons or PAHs), indicating that residual materials at the site may be affecting sediment quality near the disposal site. Consequently, additional monitoring may be needed to ensure both environmental protection and navigational capacity associated with continued use of the in-Bay disposal sites.

Existing management of the in-Bay disposal sites includes enforced compliance with monthly and yearly volume limits established for each of the sites. In addition, the USACE controls disposal at the Alcatraz site based on the site's bathymetry and expected deposition patterns to minimize growth of the mound. Management of the in-Bay sites also occurs through the suitability determinations for material proposed for disposal (Chapter 4).

Through the LTMS, a work group has been convened to evaluate and improve existing management and monitoring efforts of the in-Bay sites. The LTMS agencies will use the work group's recommendations to develop Site Management and Monitoring Plans (SMMPs) for the designated in-Bay sites (Chapter 5). It is expected that this work group will continue to meet through November 2000, and that new plans will be prepared by the LTMS agencies in time for inclusion in the initial three-year review of the Management Plan.

5.4.2 Beneficial Reuse and Disposal Sites

Management and monitoring of beneficial reuse sites are currently developed on a case-by-case basis and are site specific. The LTMS work group that convened to develop SMMPs for the in-Bay disposal sites will also address SMMPs for beneficial reuse projects. Rather than developing a single SMMP for any type of beneficial reuse projects, the group plans to develop a general guidance document to assist project proponents in developing site specific SMMPs. The work group will use lessons learned from completed and planned beneficial reuse projects (such as the Hamilton and Montezuma wetland restoration projects). This way management and monitoring guidance can be prepared using information gained from existing projects.

5.4.3 San Francisco Deep Ocean Disposal Site (SF-DODS)

The Site Management and Monitoring Plan (SMMP) for SF-DODS contains general guidelines for monitoring, while specific measures are found in the SMMP Implementation Manual developed by the USEPA.[11] The SMMP Implementation Manual is reviewed periodically and updated as necessary. Data are collected in accordance with a three-tiered monitoring program, which consists of three types of monitoring for each tier: physical, chemical and biological. Site

11 Site Management and Monitoring Plan (SMMP) for SF-DODS included in the Final Site Designation Rule.

monitoring is required only during years when disposal occurs, and costs are borne by the dredging project proponents, but may be shared in the event that more than one project uses SF-DODS in a single year. The USEPA provides management oversight and is responsible for periodic confirmatory monitoring.

5.4.4 LTMS Implementation Measures

The following measures are proposed to achieve the goals of the LTMS as they relate to the management and monitoring efforts of dredging and disposal activities:

5.4.4.1 Development of Monitoring and Management Plans for Disposal and Beneficial Reuse Options

- As previously stated in the LTMS EIS/EIR, "[t]he LTMS agencies will develop and implement site management and monitoring plans for all multi-user placement or disposal sites. These plans will specify the site use parameters necessary to ensure that impacts are minimized and/or benefits are realized. The plans also will specify the monitoring requirements and post-closure activities as appropriate for each site. Site management and monitoring plans will identify specific conditions that would constitute acceptable performance, as well as adjustments to site use parameters (including termination of continued site use) that would be triggered by specific findings of non-performance." The LTMS agencies will continue to sponsor the efforts of the management and monitoring work group through the end of 2002, which will serve as a vehicle for developing management and monitoring plans.

- As previously stated in the LTMS EIS/EIR, "[t]he LTMS agencies will provide opportunity for public input and comment on proposed site management and monitoring plans for new disposal or placement sites and on proposed substantive revisions to existing plans. Information from site monitoring efforts will be made available to the public, and opportunity for comment will also be provided as part of the periodic review for existing sites."

5.4.4.2 Continuation of Current Management and Monitoring Practices for in-Bay Disposal Sites Pending Adoption of Formal Site Management and Monitoring Plans

- Until formal site management and monitoring plans are adopted for the in-Bay disposal sites, the current management and monitoring practices will be continued. The LTMS agencies anticipate that formal site management and monitoring plans will be adopted in time for inclusion in the first three-year revision of the Management Plan.

5.5 MANAGEMENT OF THE IN-BAY DISPOSAL GOAL (CHAPTER 6)

As a part of implementation, the LTMS agencies will implement an allocation strategy so as to achieve the long-term goal, which involves reducing in-Bay disposal to 1.0 mcy per year.

5.5.1 Allocation Strategy

The reduction of in-Bay disposal to no more than 1.0 mcy per year will be phased in over 12 years.[12] This "transition" period was initiated with the July 1999 signing of the ROD for the LTMS EIS/EIR. The initial overall in-Bay disposal volume for the transition period is approximately 2.8 mcy plus a contingency volume (for emergencies or unforeseen events) of up to 250,000 cy. Over the course of the 12-year transition, the volume of material allowed for in-Bay disposal will be reduced every three years by approximately 450,000 cy. The transition will not begin until this Management Plan is adopted by the LTMS agencies, and the Bay Plan and Basin Plan are amended.

A two-phased management approach will be used. Phase I will be a voluntary effort by dredgers to reach the long-term goal of 1.0 mcy per year at the in-Bay disposal sites. As long as the overall annual transition goals are met through voluntary efforts, dredging projects will not be required to comply with project-specific in-Bay volume allocations. However, if the LTMS disposal goals are not being achieved through voluntary efforts, the Phase II allocation scheme will be implemented. During Phase II, each dredger, except small dredgers, will be assigned an in-Bay disposal allotment (Figure ES.4).

During the transition, the LTMS agencies will analyze in-Bay disposal volume records on an annual basis to determine if the transition or long-term goal is being met. There are two ways Phase II may be triggered: (1) the Management Committee determines that Phase II should be initiated, or (2) if at the triennial reviews it is determined that the average annual disposal volume over the past three years exceeds the target volumes. If either of these triggers occur, then the Commission and Regional Board will hold public hearings and vote on whether to enter Phase II. Phase II will occur unless a majority of those present and voting vote not to trigger Phase II.

If Phase II is initiated, dredgers will receive individual allotments. An allotment will not confer a right to dispose of dredged material in the Bay, because project proponents will be required to analyze disposal alternatives outside of the Bay (per the CWA and BCDC's laws and policies), and if these alternatives are found practicable and feasible, in-Bay disposal will not be allowed. Unused portions of annual volume allotments may be banked from year to year, but once an individual volume allotment is used, no additional material from specific projects will be disposed of in San Francisco Bay until a new allotment is received. For new projects or projects that believe historic dredging volumes during the LTMS data collection are loser than their dredging needs, some exceptions will apply (Chapter 6 provides more details). Additionally, 250,000 cy will be reserved each year at in-Bay disposal sites for unexpected dredging needs and emergencies.To ensure the success of achieving the transition and long-term goals of the LTMS, the LTMS agencies will foster a regional planning effort to improve coordination of dredging

12 The 12-year period was chosen to reduce economic dislocations to dredgers by allowing time for new beneficial reuse sites to come on-line, new equipment and practices to be implemented, and funding mechanisms and arrangements to be established.

Figure ES.4. LTMS Transition

projects and cooperation among dredging project proponents. The LTMS agencies also will continue to take steps already underway to reduce unnecessary dredging, thereby decreasing in-Bay disposal, and increase disposal and reuse opportunities outside of the Bay.

5.5.2 LTMS Implementation Measures

The following measures are proposed to achieve the goals of the LTMS as they relate to the mechanisms to decrease in-Bay disposal:

- BCDC and the Regional Board will adopt policies and regulations to implement the LTMS goals as described in the LTMS Management Plan.

- All LTMS agencies will sign and distribute the LTMS Management Plan.

5.6 DEVELOPMENT OF BENEFICIAL REUSE PROJECTS (CHAPTER 7)

Successful implementation of the LTMS is highly dependent on the availability of beneficial reuse and disposal options in the region which include the following: (1) wetland habitat restoration; (2) facilities to rehandle, dry and/or process dredged material for use as landfill cover or other construction purposes (including confined disposal facilities); and (3) levee rehabilitation. Another reuse option not previously analyzed through the LTMS, yet included in the Management Plan, involves using dredged material in San Francisco Bay to create habitat.

Although reuse opportunities around the estuary for multi-users and for material that is unsuitable for aquatic disposal (NUAD) are currently limited, opportunities do exist. Additionally, planning efforts are underway for new reuse projects (e.g., wetland restoration sites at the Hamilton Army Airfield [and adjacent sites] and at the Montezuma site). Figure ES.5 identifies existing and potential beneficial reuse and disposal projects.

Implementation of more beneficial reuse and disposal projects will facilitate achievement of the LTMS goals. Each project will require site-specific analysis and design, and separate environmental and regulatory review under CEQA and/or NEPA. Although each project will be unique, there are some general issues regarding potential projects that will likely need to be considered during the planning and implementation phases.

5.6.1 Site Selection and Evaluation

Beneficial reuse sites that could be developed as regional facilities, and thus be equipped to take material from a variety of sources, have been identified through the LTMS and other efforts (e.g., the Dredged Material Reuse Project). In the future, the average dredger seeking a beneficial reuse or disposal option will likely not single-handedly design or implement a brand new site, but rather use an existing or potential option (if available) or a demonstration-level project to address or resolve outstanding issues (e.g., potential water quality impacts associated with using San

Figure ES.5. Existing and Potential Beneficial Reuse and Upland Disposal Sites

Francisco Bay [i.e., saline] material in a freshwater environment [i.e., the Delta]). This will require the continuation of regional planning efforts. However, if a project proponent intends to develop a reuse site and wishes to conduct a preliminary evaluation of potential sites, a site ranking system developed through the LTMS could be used. Project proponents should also consider and analyze certain elements common to projects identified in Appendix N.

5.6.2 Wetland Restoration Physical Design and Biological Goals

During the design phase of wetland restoration reuse projects, clearly defined biological goals and physical design features to achieve these goals should be developed. The goals will improve the success of projects in providing target habitat values and help identify when and how changes in project design or other remediation measures are needed. Additionally, the success of restoration projects depends in part on improved technical data regarding various aspects of restoration.

5.6.3 Habitat Conversion or Loss and Regional Habitat Goals

Although some projects using dredged material would be geared primarily towards habitat enhancement, implementation of certain reuse projects could result in the conversion or loss of existing habitat. In the case of dredged material reuse at landfills and at existing rehandling facilities, habitat conversion or loss is a minor issue in light of the already disturbed nature of these sites. Habitat conversion or loss can take on greater significance where diked historic baylands are used for habitat restoration, a new rehandling facility constructed or expanded, and levees restored.

5.6.4 Contaminant and Salinity Exposure and Mobility

Beneficial reuse of dredged material could result in the release of contaminants or salt to on-site surface waters, groundwater, and off-site receiving waters. Further, dredged material could undergo a change in pH due to oxidation of material following placement, and acidification of material may solubilize metals that would otherwise be stable and bound to sediment in its previous anoxic aquatic environment. Additionally, constituents, including dust, could be released during initial placement and from earth-moving activities (during site preparation, construction, and/or maintenance), as well as along transportation routes to or from the reuse site.

In accordance with state and federal regulatory requirements, landfills are constructed with drain/leachate systems to collect contaminants. Rehandling facilities also would be designed to process dredged material while ensuring the isolation of material and the collection and containment of contaminants (including saline). Further, any water discharged from these sites would be required to meet state and federal standards set by law. As such, contaminant mobility at these sites would likely be a nominal issue. Although the Jersey Island levee demonstration project (1995-1996) did not reveal any significant water quality impacts, the salinity impacts from San Francisco Bay dredged material on the freshwater Delta environment will continue to be an issue of concern.

5.6.5 LTMS Implementation Measures

The following measures are proposed to achieve the goals of the LTMS as they relate to the implementation of beneficial reuse and disposal projects:

5.6.5.1 Project Planning Efforts and Site Selection

- The dredging and environmental communities will work to implement and fund beneficial reuse projects.

- To implement wetland restoration using dredged material, the BCDC and USACE will develop the Hamilton Wetlands project with the California Coastal Conservancy and all the LTMS agencies will continue to participate in the Hamilton Restoration Group.

- To facilitate selection and implementation of regional rehandling facilities and appropriate end uses, the LTMS agencies will continue to participate in the Dredged Material Reuse Project.

- The LTMS agencies will provide guidance on use of dredged material reuse projects.

- To facilitate selection and implementation of Delta levee restoration projects using material from the Bay, the LTMS agencies will continue to work with local reclamation districts, local governments, Central Valley Regional Water Quality Control Board, and the State of California Department of Water Resources. To this end, the U.S. Army Corps of Engineers will pursue a Section 204 study regarding reuse of dredged material in the Delta. Further, the LTMS agencies will develop a strategy to improve coordination with CALFED, and, as a first step, the LTMS Management Committee will send a letter to the co-chairs of the CALFED Policy/Management Committee urging it to examine the potential for reuse of San Francisco Bay material in the Delta.

- To facilitate preliminary investigations and selection of beneficial reuse and disposal sites, the LTMS agencies will work with project proponents during the project planning stage to assess and select potential sites.

- The LTMS agencies will provide status reports regarding potential and/or existing beneficial reuse and disposal options through the LTMS Implementation Management Team workshops.

5.6.5.2 Dedicated Staff Position

- The primary LTMS agencies will create a new staff position whose sole responsibility will be to facilitate selection and implementation of beneficial reuse and disposal options for dredged material. The responsibilities of this position will include, but not be limited to, serving as the point of contact regarding reuse and disposal options, attending relevant meetings, and pursuing funding and legislative opportunities for project implementation.

5.6.5.3 Design of Wetland Creation and Restoration Projects

- The permitting agencies will work with project proponents during the design phase of wetland restoration projects using dredged material to ensure the development of biological goals and physical design features (including final fill elevations and material placement guidelines, appropriate physical and chemical characteristics of dredged material) to achieve these goals. Additionally, the LTMS permitting agencies will require, as legally appropriate, that proposed restoration projects using dredged material include biological goals and appropriate physical design features to achieve these goals.

- The LTMS agencies will also include specific conditions in authorizations for dredged material reuse sites that stipulate appropriate design, operational features, and monitoring and remediation measures necessary to achieve biological goals at a given site.

5.6.5.4 Research Needs and Opportunities

- The LTMS agencies will foster, sponsor, or undertake, as resources allow, technical analyses of issues concerning wetland restoration using dredged material (e.g., suspended sediment transport), and make scientific data available to project proponents and the public to improve the design and management of restoration sites.

5.6.5.5 Minimization of Habitat Conversion and Loss through Planning

- To ensure an ideal mix of wetland patterns and types and to minimize impacts of local habitat conversion, the LTMS agencies and wetland restoration using dredged material project sponsors will work to maximize the consistency of projects with applicable regional habitat goals (e.g., USFWS' Endangered Species Recovery Plans, the interagency San Francisco Bay Area Wetlands Ecosystem Goals Project, the San Francisco Bay Joint Venture, USEPA's North Bay Initiative, and BCDC's North Bay Wetlands Protection Program). As stated in the LTMS EIS/EIR: "the LTMS agencies will encourage and authorize as legally appropriate, restoration efforts using dredged material that are designed to be consistent, to the maximum extent practicable, with specific habitat goals established by regional planning efforts—with the understanding that such projects are dynamic, changing processes—for managing the region's natural resources." To this end, the LTMS agencies will require dredged material restoration proposals, as appropriate, to include an assessment of project consistency with regional habitat goal projects for the Estuary, and subsequently review such assessments to pursue consistency with such plans. However, the LTMS agencies will also work to ensure that the full range of Bay habitats is restored, as well as ensure that individual projects are consistent with regional goals.

- As stated in the LTMS EIS/EIR, for restoration projects using dredged material in areas not covered by established regional habitat goals, "the LTMS agencies will also encourage and authorize as legally appropriate, such projects which would clearly result in an overall net gain in habitat quality and would minimize loss of existing habitat functions. Whenever

feasible, such projects will provide, as part of the project design, for a no net loss in the habitat functions existing on the project site or, where necessary, provide compensatory mitigation for lost habitat functions in accordance with state and federal mitigation requirements."

- The LTMS agencies recognize that temporal losses in existing habitat may occur at sites and will work with project proponents to minimize such losses. During the planning stage, project proponents should clearly define, evaluate, and, if feasible, incorporate existing habitat types at a potential beneficial reuse site. Moreover, proposed projects could be sited in areas that minimize loss of existing seasonal wetland habitat, where possible. Further, restoration projects could be designed to include restoration of seasonal and other important habitat types (e.g., the Hamilton Wetlands Restoration Project).

- Where possible, proposed rehandling facilities should be located in areas that minimize loss of existing wetland habitat or alternatively on sites located outside of the diked historic baylands with limited habitat value (e.g., developed or urbanized areas).

- During the planning stage, rehandling project proponents should, if feasible, incorporate wetland habitat values at proposed facilities by including individual ponds that could be managed solely as habitat or by managing the facility as a habitat area during the season when dredged material is not processed at the site. Further, where necessary, project proponents should provide compensatory mitigation for lost habitat functions in accordance with state and federal mitigation requirements.

5.6.5.6 Long-Term Site Management Plans

- During the planning phase, project proponents should develop long-term management plans for beneficial reuse and disposal sites and appropriate mechanisms to ensure long-term, permanent protection of restored wetland values. In projects where significant existing wetland habitat is proposed to be impacted, project proponents could be required to develop mitigation goals specific to the project, monitor restoration over time, and, if necessary, remediate. Further, the LTMS agencies will fully and appropriately apply the existing laws, regulations and policies to ensure that any adverse impacts associated with the implementation of new projects will be minimized and, as necessary, mitigated.

5.6.5.7 Coordination with Appropriate Delta Entities

- For projects using material from San Francisco Bay to restore levees in the Delta, the LTMS agencies will continue to coordinate with the appropriate Delta agencies and authorities (e.g., California Department of Water Resources, local reclamation districts, the Central Valley Regional Water Quality Control Board, local governments) during the project design and implementation phases to ensure adequate protection of water quality in the Delta, and that placement of dredged material will not cause unacceptable contaminant-related (or other) effects.

5.6.5.8 Funding and Research to Develop Salinity Control Measures

- The LTMS agencies will work to address potential salinity impacts to the freshwater Delta environment associated with using Bay dredged material for levee restoration. As a part of this effort, the LTMS agencies will pursue funding and research opportunities to help understand how Bay dredged material affects the freshwater environment and plant and wildlife species of the Delta. Any data collected from such efforts and other "lessons learned" from initial Delta projects will be analyzed by the LTMS agencies, in coordination with appropriate Delta authorities, to determine the feasibility of subsequent projects in the Delta and to improve project design (including salinity control measures) and management.

5.7 FUNDING (CHAPTER 8)

This chapter summarizes the outstanding tasks to be completed by each of the LTMS agencies and which have been identified in each chapter of the Management Plan. The resource needs were estimated for each task. The major additional resource needs identified were: (1) a beneficial reuse project coordinator; and (2) a data management system for dredging and dredged material disposal activities. BCDC has indicated that it will provide a staff person to fulfill the first need while additional evaluation of the second need will be required.

5.8 MANAGEMENT PLAN REVIEW AND REVISION (CHAPTER 9)

The Management Plan will be subject to periodic review and modification to ensure that the document—and the implementation process—progress in step with changing statutory, regulatory, technical and environmental conditions. During the initial three-year period, following finalization of the Management Plan, the LTMS agencies will produce an annual progress report of the program. Subsequently, every three years, the LTMS agencies will review the program's progress through evaluation of various criteria (Chapter 6, Section 6.5.3) and, if necessary, revise the Management Plan to reflect changing statutory, regulatory, technical and environmental conditions. Every six-year review could involve Bay and/or Basin Plan amendments. (The order of events and hierarchy of review are discussed in more detail in Chapter 8.)

5.8.1 LTMS Implementation Measures

The following measures are proposed to achieve the goals of the LTMS as they relate to the review and revision of the Management Plan:

5.8.1.1 LTMS Management Plan Review and Revision

- During the initial three-year period of implementation, the LTMS agencies will produce an annual progress report of the program. Subsequently, the LTMS agencies will conduct three-year reviews of the program's success by evaluating certain criteria with every six-year review being more comprehensive and possibly involving legislative changes.

5.9 SAN FRANCISCO BAY AND BASIN PLAN AMENDMENTS (CHAPTER 10)

The Bay Plan and Basin Plan provide the basic framework for the regulatory and planning activities of the SFBRWQCB and BCDC, respectively. To allow both agencies to implement the LTMS program and facilitate achievement of the program's goals, amendments to the Bay Plan and Basin Plan are needed. These amendments, as proposed, are intended to support the reduction of in-Bay disposal of dredged material and the development of disposal and reuse alternatives in the region. These amendments support the concept of a voluntary allocation program for in-Bay disposal volumes, with implementation of mandatory allocation based on evaluation of volume data in relation to the in-Bay disposal transition or long-term goal.

The proposed amendments for both the Bay Plan and Basin Plan are generally similar in intent. However, the focus of the proposals is different since the two agencies have different, but complementary, mandates. The proposed amendments to the Bay Plan are focused mostly on the process of allowing material for disposal at the in-Bay sites, while the proposed amendments to the Basin Plan are focused on the real and potential impacts of disposal to water quality and beneficial uses of those waters.

The proposed amendments are required to go through a formal administrative process that includes approval by the SFBRWQCB and BCDC, and legal review by the California Office of Administrative Law (OAL) and, for BCDC, the federal office of Ocean Resources Coastal Management (OCRM). Additionally, the scientific aspects of the policy for the Basin Plan will require an external peer review and may require final approval by USEPA. Only after these processes are completed will these proposed amendments be considered final and applicable. Currently, both processes are scheduled to be completed by January 2001.

BCDC's implementing regulations provide specifics on how to carry out policies described in the Bay Plan.[13] Therefore, to allow the BCDC to fully implement the proposed Bay Plan policy amendments, changes to its regulations are also proposed. It should be noted that the SFBRWQCB does not have similar implementing regulations. The proposed regulation changes will be required to go through a formal administrative process that includes approval by the BCDC, and legal review by the OAL and OCRM.

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13 California Code of Regulations, Title 14. Natural Resources. Division 5. San Francisco Bay Conservation and Development Commission. Vol. 19.